ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

In the Matter of	)	
	)	
Revision of the Commission's Rules to ensure compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
	)	RM-8143

COMMENTS OF AMSC SUBSIDIARY CORPORATION

AMSC Subsidiary Corporation ("AMSC") hereby comments on the "Notice of Proposed Rulemaking" (the "NPRM") in the above-referenced proceeding.[1/] In the NPRM, the Commission proposes to require Commercial Mobile Radio Service ("CMRS") providers to make certain enhanced 911 services available over time to mobile radio callers. AMSC is willing and able to offer many of the features of enhanced 911 services on its domestic Mobile Satellite Service ("MSS") system. Other features, however, principally related to position location, would add too much to the cost of the service to be feasible for most customers.

Background

The Commission authorized AMSC in 1989 to construct, launch and operate the first dedicated U.S. MSS system, as the culmination of a licensing process that began with the filing of

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1/ Notice of Proposed Rulemaking, CC Docket No. 94-102, RM-8143, FCC 94-237 (October 19, 1994).

applications in 1985.[2/] Construction of the $650 million system, including the $40 million ground facility in Reston, Virginia is now almost complete. Production of the first 200,000 mobile terminals by Westinghouse Electronics Company and Mitsubishi Electronics Corporation is well underway. The first satellite is scheduled for launch in March, and service is expected to begin in the summer of 1995. The new system will provide for the first time mobile voice and data communications services to people who live, work or travel in rural and remote areas of the U.S. unserved by terrestrial technologies. AMSC estimates that these areas include more than 40 percent of the land mass of the continental United States.

The architecture of AMSC's system is basically the same for all customers. Calls originating from a mobile terminal will be transmitted to the satellite in the L-band (1.5/1.6 GHz). The satellite will translate those frequencies into the Ku-band and transmit the call to the AMSC feederlink earth station in Reston, Virginia. AMSC will then hand the call to its long-distance carrier, for termination anywhere in the world. Calls to mobile terminals will be routed to AMSC's earth station, uplinked to the

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[2/] Memorandum Opinion, Order and Authorization, 4 FCC Rcd 6041 (1989); Final Decision on Remand, 7 FCC Rcd 266 (1992); aff'd sub nom. Aeronautical Radio, Inc. v. FCC, 983, F.2d 275 (D.C. Cir. 1993). AMSC is regulated as a common carrier. Second Report and Order, 2 FCC Rcd 485, 490 (1987).

In 1994, the Commission included MSS among the services to be classified as CMRS. Second Report and Order, 9 FCC Rcd 1411, 1457-58 (1994).

satellite in the Ku-band, and transmitted to mobile terminals in the L-band.[3/]

AMSC expects its system to serve between approximately 300,000 and 600,000 voice customers. The largest segment of AMSC's market is likely to be cellular customers that do not have service in rural and remote areas. These customers will use a dual-mode phone that will operate on cellular frequencies when the user is within range of a terrestrial system and in the L-band when the user is outside of cellular range, thus allowing uninterrupted service.[4/] These dual-mode phones are expected to cost about $2,000. The AMSC system also will be used by public safety and government agencies.[5/]

Though AMSC has not finalized its plans, it expects that 911 calls will be handed from the AMSC switch in Reston, Virginia, into a dedicated trunk group and routed directly to an outside vendor who will handle the call similar to a 911 operator.[6/]

3/ AMSC will also have available an earth station at the Washington International Teleport in Alexandria, Virginia, in order to provide redundancy and diversity on those occasions when rain fading is a problem for Ku-band communications.

4/ When customers who have a dual-mode phone are within range of a cellular system, their access to 911 sevices will be governed by the capability of the cellular system that receives the call.

5/ The advancement of safety communications was one of the primary factors for allocating spectrum for MSS. Notice of Proposed Rulemaking, 50 Fed. Reg. 8149 (1985), at para. 4.

6/ This description of AMSC's provision of 911 service does not necessarily cover the provision of 911 service by other carriers or entities that may lease space segment from AMSC and offer mobile satellite service using their own ground facilities.

Based on what the caller can tell the operator about the situation (including the type of emergency and the location of the caller), the operator will send the call the best available public safety entity. The operator has at its disposal an extensive data base of public safety answering points ("PSAPs"), including police, fire and medical emergency service providers. The vendor will then establish a conference call with the appropriate PSAP, keeping the channel open and recording the conversation.

As currently designed, the AMSC system will pass 911 calls for all properly registered mobile terminals and will be capable of providing the caller's Automatic Numbering Information ("ANI") to the outside vendor. The system is designed so that less than one percent of all 911 calls will experience any blocking between the mobile terminal and the outside vendor. The system, however, is incapable of providing priority on a per-call basis.[7/] In addition, the system cannot determine the location of a mobile terminal, except among the coverage areas of the six satellite beams, which is such a large area as to be essentially useless for emergency service. GPS receivers will be available to MSS subscribers at a cost of about $500, which will tell the caller where he or she is, but the AMSC system has not been designed to automatically transmit this position location data to the AMSC

7/ As required by its license, AMSC will provide priority and preemptive access for aeronautical safety communications; and, if authorized, provide the same service to maritime distress and safety communications. This priority service, however, will be provided to a discrete category of user terminals that qualify and subscribe to the service.

earth station. The ability to transmit such data automatically would require a different design for the mobile terminals and would lead to a further increase in the cost of those terminals.

The Commission issued the NPRM in response to a petition for reconsideration filed by the Texas Advisory Commission on State Emergency Communications in the FCC proceeding on personal communications services and a position paper prepared by three public safety organizations and the Personal Communications Industry Association.

In the NPRM, the Commission both proposes to require and seeks comment on the feasibility and cost of requiring CMRS providers to include in all their service offerings the same kind of enhanced 911 services as are currently part of service for customers of most landline telephone companies. Specifically, within one year after the effective date of the order adopting rules in this proceeding, CMRS providers would be required to provide access to 911 service without user validation, priority for 911 calls over non-emergency calls and access to 911 service by individuals with speech or hearing disabilities through TTY devices. The Commission also proposes a three-stage, five-year process for implementation of automatic location identification ("ALI"). The Commission also proposes that within three years wireless systems must provide PSAP attendants with the capability to call back the 911 caller if the call is disconnected and common channel signalling capabilities.

Discussion

AMSC recognizes the importance of emergency communications. The AMSC system's very existence is expected to provide a tremendous boon to the provision of emergency services in vast areas that are presently unserved by any mobile communications facilities and, in many cases, by any communications facilities whatsoever. For the first time, police, fire, and emergency medical services in rural and remote areas will have the ability to communicate even outside the range of their traditional mobile radio facilities.

Moreover, AMSC has devised an approach to the handling of 911 calls that should provide its subscribers with excellent service in most cases. All subscribers to AMSC's system will be able to access 911 services.[8/] This includes users of TTY-like devices. All 911 calls will be handled by trained professionals who will be able to route 911 calls to the appropriate public service entities in the appropriate jurisdiction. The calls will rarely be blocked even momentarily. The system provides for the transmission of ANI, thus permitting emergency personnel to reconnect a call if the call is accidentally disconnected. Subscribers that want to supplement their equipment with GPS position location capability may do so; in which case, in the

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8/ The Commission proposes in the NPRM to prohibit any requirement for user validation prior to accessing 911. NPRM. para. 41. AMSC understands that this proposal is intended to prevent local service providers from blocking roamer access to 911 services. As a nationwide service provider, this proposal is not relevant to the AMSC system. AMSC will provide 911 service to all MSS subscribers.

event of an emergency they should be able to provide the 911 operator with their precise location.

To provide the full range of enhanced 911 requirements, however, is too costly to be justified, at least at the present time.[9/] The modifications required to comply with the additional proposed enhanced 911 requirements would require several hundred million dollars of changes to AMSC's system design and to the design of the mobile terminals. MSS is a new service and these additional costs could severally hamper development of the service. AMSC estimates that demand for its service would be drastically curtailed if users were required to spend the additional $500-$1,000 per mobile terminal that would be needed to provide GPS capability and if all customers were required to pay for the changes to AMSC's switch that would automatically transmit the position location information.[10/]

9/ Moreover, the first two phases of the Commission's proposed ALI requirements (location of the base station and distance of the caller from the base station) would not apply to the AMSC system, which has a single earth station for its nationwide system.

10/ The Commission notes that Big LEO MSS systems operating in the 1.6/2.4 GHz bands will be required to provide position determination capability. NPRM, fn. 40. The purpose of this requirement was to facilitate protection to Radio Astronomy, which shares co-primary status in the 1.6 GHz band with MSS uplinks. Report and Order, CC Docket No. 92-166, at paras. 100-109 (October 15, 1994). The position location capability is to be used to prevent the operation of any mobile terminal that enters a protection zone surrounding certain Radio Astronomy facilities. Since AMSC's domestic geostationary system will not share frequencies with Radio Astronomy to the same extent as the Big LEOs, there is no similar requirement for position location for the operation of the AMSC system. In addition, the Commission has indicated a willingness to eliminate the position location requirement for Big LEOs if they can

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The basic mobile telephone is already relatively expensive at $2,000, a 25-50 percent increase in cost will be prohibitive for many customers. Moreover, any customer that wants the extra position location capability can acquire it on an individual basis. AMSC estimates that modification of the earth station and switch would cost at least $2 million. This includes significant modifications to channel unit software, signalling units, the network access processor and the station logic signalling subsystem.

Conclusion

Therefore, for the reasons set forth above, AMSC Subsidiary Corporation respectfully urges the Commission not to impose the full range of enhanced 911 requirements on AMSC.

Respectfully submitted,

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[10/](...continued)
demonstrate the feasibility of an alternative technology, such as a beacon actuated protection system, to protect radio astronomy. Id. at 104.

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TECHNICAL CERTIFICATION

I, Jeffrey Pike, hereby certify that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing Comments of AMSC Subsidiary Corporation, and that the information is complete and accurate to the best of my knowledge.

By: _____
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